# The Core Behavioral Competencies of Teachers in Tiwi District

Lyzel C. Copioso<sup>1</sup>

<sup>1</sup>Master of Arts in Education (MAEd) Major in Administration and Supervision Daniel B. Peña Memorial College Foundation, Inc.

Publication Date: 2025/11/17

Abstract: This study determined the level of competence of the Core Behaviors of teachers in the Tiwi District, Division of Albay, for the School Year 2023-2024. Specifically, it answered the following questions: 1. What is the level of competence in core behavior, along: self-management; b. professionalism and ethics; c. result focus; d. teamwork; e. service orientation; f. innovation; 2. Is there a significant difference on the level of competence on the core behavior between the elementary and secondary teachers? 3. What are the problems met on the assessment of core behavioral competencies of teachers? 4. What professional development plan may be proposed to address the problems?

The researcher employed a descriptive-survey, comparative research method. The respondents of this study were the selected 234 public elementary and secondary school teachers from the Tiwi District, under the Division of Albay. Out of this number, 134 were from elementary and 100 were from secondary.

To address the research problems identified in this study, a combination of descriptive and inferential statistics was used. Descriptive statistics were employed to analyze respondents' competence levels concerning key behavioral skills. Specifically, frequency counts and percentages were used to measure the distribution of responses. At the same time, weighted means were calculated to evaluate respondents' self-rated competence levels based on a five-point Likert scale. To interpret the weighted mean scores, the scale 5 – Very High, 4 – High, 3 – Moderate, 2 – Low, and 1 – Very Low was used. An analysis of variance (ANOVA) was used to determine if there is a significant difference in core behavioral competence between elementary and secondary schools across the six behavioral competencies. The F-test formula was used to evaluate these differences. The data on the problems met were interpreted using frequency count and ranking.

Keywords: Teacher Competencies, Core Behavioral Competencies, Professional Development.

**How to Cite:** Lyzel C. Copioso (2025) The Core Behavioral Competencies of Teachers in Tiwi District. *International Journal of* Innovative Science and Research Technology, 10(11), 586-596. https://doi.org/10.38124/ijisrt/25nov379

# I. INTRODUCTION

The teaching profession is ever evolving. It continually evolves in response to technological advancements, shifting educational methodologies, and updated curricula. Today's educators are not just information providers; they are dedicated to facilitating learning experiences, adapting to the unique needs of their students, and actively contributing to the enhancement of their schools and communities. As their roles expand, teachers must embrace adaptability, innovation, and teamwork to meet the challenges of our fast-paced, interconnected world. This shift highlights the importance of strong behavioral skills for effective teaching beyond academic instruction.

The Organization for Economic Co-operation and Development (OECD, 2023)¹ emphasizes the importance of supporting teachers' ongoing professional development. As educational demands continue to grow, lifelong learning is essential for helping educators maintain their effectiveness, particularly in adapting to new technologies and fostering inclusive learning environments. Emphasizing the development of behavioral competencies is crucial for ensuring that teachers can thrive in these rapidly evolving educational contexts.

In line with these ideas, Sustainable Development Goal 4 (SDG 4)<sup>2</sup> emphasizes the necessity of high-quality education by highlighting the importance of well-qualified teachers. Target 4.c specifically encourages countries to significantly increase the number of trained and effective educators through

various global and national initiatives aimed at training and professional development (United Nations, 2015)<sup>3</sup>. Cultivating behavioral competencies—like ethical behavior, teamwork, and innovation—is critical for reaching this goal, as these skills directly influence the quality of teaching and student success.

Findings from the OECD's (2019)<sup>4</sup> Teaching and Learning International Survey (TALIS) reveal that teachers who participate in collaborative professional development and engage in reflective practices are more successful in enhancing student performance. The study emphasizes that behavioral skills such as teamwork, adaptability, and a focus on results contribute to creating vibrant, student-centered learning environments. These competencies affect classroom dynamics and determine how teachers manage lessons, support their students, and collaborate with fellow educators.

The 1987 Philippine Constitution also underscores teachers' rights to professional growth. Article XIV, Section 5(4)<sup>5</sup> states,

"The State shall enhance the right of teachers to professional advancement."

This provision mandates active governmental involvement in fostering the growth of the teaching profession. To uphold this constitutional directive, it is essential to reinforce core behavioral competencies, including self-management, professionalism, results orientation, teamwork, service orientation, and innovation. Strengthening these competencies ensures that educators are fully equipped to pursue professional advancement and contribute meaningfully to the quality of education.

The Philippine Professional Standards for Teachers (PPST), created by the Department of Education and the Philippine National Research Center for Teacher Quality, outlines what constitutes teacher quality. It includes content knowledge and pedagogy expectations while emphasizing behavioral standards like ethical conduct, professional development, and collaboration (Philippine National Research Center for Teacher Quality [RCTQ], n.d.)<sup>6</sup>. These competencies are essential for maintaining a skilled and professional teaching workforce.

To foster performance evaluation and improvement, the Department of Education rolled out the Results-Based Performance Management System (RPMS) through DepEd Order No. 2, s. 2015. This system identifies six core behavioral competencies: self-management, professionalism and ethics, results orientation, teamwork, service orientation, and innovation (Department of Education [DepEd], 2015)<sup>7</sup>. Teachers use the Electronic Self-Assessment Tool (e-SAT) to reflect on their professional behaviors and align with DepEd's Core Values, allowing personal growth and development in their teaching practices.

Behavioral competencies are fundamental for teachers to effectively manage their roles, build positive relationships, and enhance their schools' effectiveness. Skills like selfmanagement help teachers stay focused and resilient; professionalism and ethics foster integrity and fairness; a results-focused mindset encourages continuous improvement; teamwork facilitates collaboration; service orientation reflects genuine care for students and the community; and innovation inspires new teaching methods.

However, many educators face challenges consistently upholding these behavioral competencies due to vague assessment processes, limited feedback, and inadequate training. These issues can significantly impact the quality of education and affect teachers' ability to fulfill their professional roles effectively. The growing emphasis on teacher quality further justifies the need to conduct this study, as understanding and enhancing teacher competencies is a primary driver of student success. By analyzing the core behavioral competencies of teachers and understanding the influence of administrative actions on these competencies, educational leaders can develop targeted strategies for professional development that are more impactful and relevant. Hence, this study is both timely and necessary to address teachers' evolving needs.

The researcher conducted this study to highlight the crucial role of effective professional development programs in meeting the demands of modern education. The primary aim is to explore core behavioral competencies among teachers, thereby identifying specific areas for growth and support. By doing so, the study seeks to ensure that educators are fully equipped to thrive in their roles.

Moreover, it aims to bridge existing gaps in understanding how these competencies translate into effective teaching behaviors essential for enhancing student learning experiences. The insights gained from this research will inform more targeted and meaningful professional development initiatives. Ultimately, these efforts contribute to the broader goal of improving the country's public education quality.

# II. THEORETICAL FRAMEWORK

The theoretical framework is a critical component of any research process, serving as the intellectual scaffolding that supports the inquiry. As described by Grant and Osanloo (2014),<sup>8</sup> it establishes the foundation upon which the entire study is constructed. It justifies the rationale behind the research, supports the formulation of research questions, and guides the interpretation of results. By providing a lens through which data are understood and analyzed, the theoretical framework ensures that the research is not merely descriptive but grounded in established knowledge and conceptual understanding. It also informs and aligns the literature review, methodology, and analytical procedures of the study.

This study, which delves into the core behavioral competencies of teachers in the Tiwi District, is grounded in four well-established and complementary theories: Watson's Behavioral Theory, Knowles' Adult Learning Theory, Higgins' Regulatory Focus Theory, and Schön's Reflective

Practice Theory. Each of these frameworks contributes a unique lens for understanding how teachers develop, sustain, and apply core competencies, namely, self-management, professionalism and ethics, results orientation, teamwork, service orientation, and innovation, within dynamic educational contexts.

Behavioral Theory, pioneered by John B. Watson (1913),<sup>9</sup> is foundational in understanding how external stimuli influence human actions. According to Watson, behavior is not innate or governed by internal mental states but learned through environmental conditioning. Within this framework, teachers' behaviors can be viewed as learned and reinforced through interaction with their surroundings. The observable and modifiable nature of behavior aligns well with the competency-based approach of this study. When applied to the school context, this theory emphasizes the importance of structured, supportive environments in shaping positive teacher behaviors.

In practical terms, Watson's theory suggests that school culture, leadership, and professional feedback systems play a pivotal role in reinforcing desired behaviors. Constructive feedback, recognition, and a sense of community help shape and maintain professional habits. This understanding underscores the importance of creating a culture where professional conduct, collaboration, and innovation are consistently modeled and rewarded. Teachers who operate in such environments are more likely to develop and sustain the behavioral competencies essential to learner success and institutional effectiveness.

Building upon this behavioral foundation, Knowles' (1980)<sup>10</sup> Adult Learning Theory (Andragogy) offers an essential perspective for understanding how teachers—as adult learners—acquire and refine these competencies. Knowles asserted that adults learn best when they are treated as self-directed individuals with rich prior experiences. They are motivated to learn when content is practical, relevant, and applicable to real-world tasks. In the context of this study, this theory explains how teachers internalize and apply new behavioral skills when professional development (PD) is experiential, collaborative, and tailored to their needs.

Rather than passive recipients of knowledge, teachers are active participants in their growth. Professional learning opportunities that emphasize reflection, peer collaboration, and hands-on practice are more likely to lead to lasting behavioral change. When PD is aligned with the principles of andragogy, it supports the cultivation of competencies like service orientation, teamwork, and innovation. This approach also encourages sustained engagement with learning, ultimately promoting both personal and institutional growth.

While Behavioral Theory and Adult Learning Theory focus on environmental and experiential learning, Higgins' (1997)<sup>11</sup> Regulatory Focus Theory (RFT) adds a motivational dimension to the development of core competencies. RFT posits that individuals are motivated by two primary orientations: promotion focus and prevention focus. Promotion-focused individuals are driven by growth,

accomplishments, and advancement, whereas preventionfocused individuals prioritize safety, responsibility, and adherence to rules. Within the teaching profession, both motivational orientations are relevant and influential.

Promotion-focused teachers may be more inclined toward innovative instruction, service initiatives, and leadership in change efforts, behaviors that align with competencies such as innovation and results orientation. Conversely, teachers with a prevention focus are often consistent in applying rules, upholding ethical standards, and ensuring student welfare, reflecting competencies such as professionalism and self-management. The dual structure of RFT thus helps explain the diversity in how teachers approach their roles and responsibilities. It also highlights the value of cultivating both types of motivation within professional development efforts, ensuring a balanced and adaptive teaching workforce.

Adding further depth to this theoretical foundation is Schön's (1983)<sup>12</sup> Reflective Practice Theory, which highlights the critical role of reflection in professional learning. Schön introduced two key concepts: *reflection-in-action* (thinking on one's feet during a teaching moment) and *reflection-on-action* (evaluating past experiences to inform future practice). This theory frames teaching not just as technical execution but as an evolving practice that requires constant self-awareness and adaptation. It encourages educators to examine the effectiveness of their actions, decisions, and interactions with students and make informed changes based on that insight.

Recent studies, such as that of Machost and Stains (2023),<sup>13</sup> support Schön's assertions by demonstrating how reflective processes foster critical thinking, adaptive expertise, and intentional teaching behaviors. Their research emphasizes that structured reflection leads to deeper learning and more substantial alignment between beliefs and practice. When applied to behavioral competencies, reflection enables educators to examine and refine traits such as ethics, teamwork, and service orientation. It also supports a continuous cycle of improvement, making it an essential component of sustained professional growth.

# III. REVIEW ON LITERATURES AND STUDY

Competency, widely interpreted across disciplines, gains specific significance in teacher education and job performance. In competency-based teacher education, Nessipbayeva (2012)<sup>14</sup> highlights the need for aspiring teachers to demonstrate key attributes that align performance with professional standards. Similarly, Philip and K. (2017)<sup>15</sup> underscore the multifaceted nature of teaching competency, integrating pedagogical, cultural, communicative, personal, and intellectual skills to address learners' diverse needs effectively.

The demand for high-quality professional development is pressing, driven by evolving educational requirements, technological advances, and diverse student populations (World Bank, 2016). Behavioral competencies, originally conceptualized by McClelland in the 1970s, focus on

knowledge, skills, and abilities that differentiate top performers from average ones. Goldstein (2024)<sup>17</sup> and Gandhi (2023)<sup>18</sup> emphasize that these competencies—such as communication, collaboration, problem-solving, adaptability, and leadership—are essential for individual and organizational success.

Among these, self-management is particularly crucial for teachers, involving regulation of emotions, behaviors, and energy to achieve personal and professional goals (Sajeevanie, 2020). <sup>19</sup> Effective self-management promotes resilience, reflective practice, and sustained engagement, directly benefiting student learning and professional collaboration. Similarly, professionalism and ethics underpin teachers' conduct, fostering integrity, accountability, and supportive learning environments (Mahajan et al., 2016). <sup>20</sup>

Other critical behavioral competencies include communication and results focus, which enhance information exchange, proactive problem-solving, and alignment with organizational goals (O'Leary, 2017). To develop and assess these competencies, educational institutions increasingly rely on competency models and structured evaluation methods, including self-assessment, peer review, and manager assessment. Self-assessment, in particular, enables teachers to reflect on practices, identify areas for growth, and engage in targeted professional development (Axiak, 2023); (Jimerson, 2017); (Johnson, 2015). (Johnson, 2015).

Professional development encompasses formal and informal approaches, from workshops to reflective practices, aiming to enhance teaching effectiveness and student outcomes (Warsi & Khurshid, 2022);<sup>25</sup> (Darling-Hammond et al., 2017);<sup>26</sup> (Davis & McDonald, 2019).<sup>27</sup> Focusing on core behavioral competencies—self-management, professionalism and ethics, results focus, teamwork, service orientation, and innovation—empowers teachers to create inclusive, effective learning environments while supporting personal growth and organizational success. Mastery of these competencies strengthens both individual performance and institutional culture, highlighting their central role in contemporary education.

In the Philippines, teachers' professional competencies are increasingly recognized as essential for educational quality and student success. Core behavioral competencies enable educators to address diverse learning needs and foster positive classroom environments. The Department of Education (DepEd) emphasizes these competencies through training programs and evaluation frameworks, highlighting that effective teaching extends beyond subject knowledge to managing relationships, adapting to challenges, and achieving results (DepEd Order No. 2, series of 2015).<sup>28</sup>

DepEd identifies six essential core behavioral competencies: self-management, professionalism and ethics, results focus, teamwork, service orientation, and innovation. Self-management involves regulating emotions, behaviors, and efforts to achieve personal and professional goals, supporting resilience, adaptability, and lifelong success (Daria, 2023);<sup>29</sup> (David, 2017);<sup>30</sup> (Pearson, 2018).<sup>31</sup> Teachers'

effectiveness, however, is challenged by workload, administrative duties, and occupational stress, which can affect productivity and student outcomes (Manabat, 2016);<sup>32</sup> (Dizon, 2016),<sup>33</sup>

Professionalism entails expertise, adherence to ethical standards, and quality work, fostering transparency and positive work environments (Sabocohan & Supremo, 2016);<sup>34</sup> (Molino, 2019).<sup>35</sup> Studies in local governance provide insight into challenges in ethical practice, illustrating parallels in schools where pressures, politics, and unclear boundaries affect integrity and accountability (Camaya & Gabriel, 2019).<sup>36</sup> Applying these insights to education highlights that professionalism requires consistent ethical conduct, responsibility, and a commitment to high standards, supported by training and leadership.

Results focus emphasizes producing high-quality outputs that align with organizational goals, while teamwork enables collaborative achievement of shared objectives (Piquero, 2024);<sup>37</sup> (Reyes & Apostol, 2024).<sup>38</sup> Service orientation fosters understanding and responsiveness to others' needs, enhancing engagement and trust (Staff, 2024).<sup>39</sup> Innovation is critical for equipping learners with 21st-century skills, improving pedagogy, processes, and systems, and stimulating creative problem-solving (Zamora et al., 2022);<sup>40</sup> (Moralista, 2016);<sup>41</sup> (Cadungog et al., 2023);<sup>42</sup> (Barro & Villocino, 2023).<sup>43</sup>

Integrating these competencies into professional development ensures teachers are proficient not only in subject matter but also in soft skills essential for effective teaching. Continuing professional development should be systematic, intensive, and aligned with teachers' strengths and needs, incorporating self-assessment, reflection, peer review, mentoring, and professional dialogue (Ocampo & Lucasan, 2019);<sup>44</sup> (Baniaga et al., 2024);<sup>45</sup> (Development Asia, 2023).<sup>46</sup> Investing in behavioral competencies enhances teachers' adaptability, resilience, and long-term effectiveness, leading to improved student outcomes and stronger educational institutions.

Effective teaching relies on multiple behavioral competencies, including communication, self-management, teamwork, service orientation, and innovation. Tutkun (2019)<sup>47</sup> highlights the importance of intellectual, emotional, and behavioral competencies in communication, emphasizing that teachers must convey subject knowledge clearly, manage emotions, and utilize appropriate body language to foster supportive classroom environments. While Tutkun focuses on prospective teachers' communication skills, the present study evaluates a broader set of behavioral competencies in practicing elementary and secondary teachers, identifying gaps and proposing professional development strategies.

Self-management is critical for balancing personal and professional responsibilities. Singh and Agarwal (2019)<sup>48</sup> note that emotional regulation, time management, stress management, and organizational skills directly influence teachers' effectiveness and student outcomes. Similarly, Kahveci (2023)<sup>49</sup> highlights that teacher attitudes and

behaviors—both positive and negative—affect students' cognitive, emotional, and social development. While prior studies often focus on prospective teachers or single competencies, the current study systematically examines multiple core competencies, comparing levels between elementary and secondary educators to inform targeted professional development.

Professionalism and ethical behavior remain central to teacher effectiveness. Tanang and Abu (2014)<sup>50</sup> and Postholm (2018)<sup>51</sup> underscore the role of professional development, collaboration, and reflective practice in enhancing teacher quality. These studies align with the present research in advocating structured, ongoing development but differ in scope: the present study quantifies behavioral competencies and identifies specific gaps in practice.

Teamwork is another essential competency. Msonge and Lekule (2024)<sup>52</sup> examine how school heads facilitate teacher collaboration in Tanzanian schools, linking teamwork to motivation, efficiency, and innovation. The current study similarly assesses teamwork but focuses on individual teacher competencies across elementary and secondary schools, highlighting differences and training needs.

Service orientation and innovation are increasingly vital in educational contexts. Lekhanya (2014)<sup>53</sup> examines service orientation at an institutional level, whereas the current study evaluates it at the individual teacher level. Trapitsin et al. (2018)<sup>54</sup> and Zamora et al. (2022)<sup>55</sup> emphasize the role of innovation in education, demonstrating that teachers' willingness and capacity to implement new ideas enhance classroom outcomes. The present study integrates innovation with other behavioral competencies, assessing both practical application and competency gaps.

Professional development is critical for sustaining teacher growth. Kunst et al. (2016)<sup>56</sup> and Sharma and Pandher (2018)<sup>57</sup> highlight the influence of goal orientation, self-assessment, and reflective practices on engagement in professional learning. By incorporating behavioral competencies into structured professional development, teachers can enhance their adaptability, resilience, and effectiveness, ultimately improving student learning outcomes and organizational performance.

Effective professional development encompassed not only instructional skills but also behavioral competencies, enabling teachers to adapt to evolving demands and deliver high-quality education. In this context, Natividad and Oco (2023)<sup>58</sup> demonstrated that teachers' passion strongly influenced engagement and resilience, while competencies such as teamwork, self-management, and service orientation significantly impacted teaching performance. Consequently, professional development programs were recommended to simultaneously cultivate core values and behavioral competencies to enhance teacher effectiveness.

Furthermore, Dimasimpun and Abarquez (2024)<sup>59</sup> found that teaching styles significantly shaped behavioral competencies. Teachers employing facilitative or delegative approaches exhibited higher levels of teamwork and

innovation, whereas lecture-based methods favored self-management. Thus, professional development initiatives were suggested to encourage pedagogical approaches that strengthened essential competencies and promoted interactive learning environments.

Conversely, Barro and Villocino (2023)<sup>60</sup> reported no immediate correlation between newly hired teachers' self-reported competencies and performance ratings, highlighting the need to consider contextual and systemic factors. Meanwhile, Ambasa and Labitad (2024)<sup>61</sup> indicated that teachers with strong behavioral competencies reported higher job satisfaction, suggesting that these skills contributed indirectly to retention and professional effectiveness. Similarly, Fabre and Osias (2024)<sup>62</sup> revealed that while self-management was a strength, service orientation required improvement, and its impact on school performance indicators was limited.

In addition, Cruzos (2022)<sup>63</sup> emphasized the interconnection between core behavioral competencies, work attitudes, and teaching performance, demonstrating how competency levels influenced both teacher engagement and instructional outcomes. Aligned with this, Tunay (2021)<sup>64</sup> highlighted the importance of integrating motivational strategies—such as recognition, reward systems, and mentoring—with competencies like self-management, professionalism, and innovation to enhance teaching efficacy.

Moreover, Cagaanan and Arenga (2021)<sup>65</sup> examined teacher training needs and behavioral competencies in the new normal, showing their significant influence on technology utilization and assessment practices. Similarly, Solomon (2023) emphasized the use of self-assessment tools to identify competency gaps and design professional development plans, particularly in adapting to online and hybrid learning contexts.

Additionally, Dedace and Alquizar (2024)<sup>66</sup> conducted a division-wide evaluation of teachers' behavioral competencies using IPCRF data, revealing both strengths and areas for improvement, and recommended targeted workshops, mentoring, and training programs. In parallel, Celerio and Andal (2024)<sup>67</sup> explored the mediating role of core behavioral competencies and motivational strategies in crisis leadership, demonstrating how these elements collectively enhanced teacher performance in challenging situations.

Furthermore, De Guzman (2022)<sup>68</sup> highlighted that even highly rated master teachers exhibited gaps in instructional and leadership competencies, suggesting the necessity of continuous, targeted professional development. In a similar vein, Dalimbang (2024)<sup>69</sup> emphasized structured Learning Action Cell (LAC) sessions to enhance ethics, professionalism, and innovation among elementary teachers. Significantly, Bantoc and Yazon (2023)<sup>70</sup> confirmed that core behavioral competencies and self-efficacy significantly predicted teacher performance, reinforcing the value of systematic assessment and targeted interventions.

ISSN No:-2456-2165

https://doi.org/10.38124/ijisrt/25nov379

These studies demonstrated that assessing, reinforcing, and integrating core behavioral competencies into professional development was essential for enhancing teacher effectiveness, satisfaction, and student outcomes. Accordingly, the present study evaluated the competency levels of elementary and secondary teachers in the Tiwi District, identified gaps, and proposed targeted professional development initiatives to address these needs.

#### IV. METHODOLOGY

This research employed a quantitative method, specifically a descriptive-comparative survey, to gather and analyze data on teachers' core behavioral skills. The descriptive design is suitable for studies that aim to depict current conditions without altering variables. According to Muldyagin (2018),71 the descriptive research method identifies and describes the characteristics of specific variables or groups without necessarily investigating cause-and-effect relationships. This aligns with the study's goal to assess the existing levels of core behavioral competencies among teachers in the Tiwi District, including differences based on demographic and professional factors. Additionally, the quantitative approach relies on objective measurements and statistical analysis. Data collection was conducted through structured questionnaires, facilitating a consistent and systematic evaluation. This approach enables the use of mathematical, statistical, and computational methods to identify patterns, differences, and relationships within the data. The descriptive-comparative element further enabled the researcher to analyze data across various groups, such as age, teaching experience, or academic background, offering detailed insights into how these factors may influence behavioral competencies.

Mohajan (2020)<sup>72</sup> also stated that it is used to quantify attitudes, opinions, behaviors, and other defined variables, and to generalize results from a larger sample population by generating numerical data. Since the study examines the level of competence of teachers in core behaviors, the researcher employed this method. Additionally, quantitative data is more feasible, as it can be collected in a shorter amount of time than qualitative methods.

# V. FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

A. Findings

The following are the important findings of the research.

➤ All competencies in the core behaviors have a Very High level of competence adjectival description based on the responses of the elementary teachers in Tiwi District. The ratings are as follows: Teamwork (4.73) Very High; Professionalism and Ethics (4.69) Very High; Self-Management (4.61) Very High; Innovation (4.50) Very High; Service Orientation (4.46) Very High; and Result Focus (4.41) Very High.

A Very High level of competence is observed regarding the level of core behaviors for the secondary. The results are as follows; Teamwork (4.65) Very High; Professionalism and Ethics (4.62) Very High; Self-Management (4.52) Very High; Innovation (4.39) Very High; Service Orientation (4.37) Very High; and Result Focus (4.36) Very High.

The average weighted means of all the competencies are the following: Teamwork (4.69) Very High; Professionalism and Ethics (4.66) Very High; Self-Management (4.57) Very High; Innovation (4.54) Very High; Service Orientation (4.42) Very High; and Result Focus (4.39) Very High. All reflecting a Very High level of competence.

The consistently high ratings across all six core behavioral competencies point to a strong professional foundation among teachers in the Tiwi District. These results emphasize the presence of a dedicated and behaviorally competent teaching force that is well-prepared to address the demands of the present educational landscape.

Along with self-management, the computed sum of squares has a value of 0.02 with the same mean square of 0.02 for between treatment, while within treatment, the sum of squares has a value of 0.03 and a mean square of 0.00375. Thus, the computed F value for self-management is 5.33. This is higher when compared with the F tabular value of 5.318. For professionalism and ethics, the computed sum of squares has a value of 0.01 with the same mean square value between the treatments, while in within the treatments, the sum of squares has a value of 0.03 and a mean square value of 0.00375. The F computed value is 2.66, which is lower than the F-tabular value of 5.318.

In results focus, the value of the sum of squares is 0.01, and the mean square is the same between treatments and within treatments, the sum of squares is 0.18, and the mean square of 0.0225. The computed F-value is 0.44, which is lower than the F-tabular value of 5.318. For Teamwork, the computed sum of squares is 0.01, and with the same value of mean square between treatments, while within treatments, the sum of squares is 0.10 with a mean square of 0.0125. The F-computed value is 0.80, which is lower than the F-tabular value of 5.318.

Service orientation with the computed sum of squares of 0.02 and has a similar value of mean square between treatments, while within treatments, the computed sum of squares is 0.10 and a mean square of 0.0125. The computed F-value is 1.60, which is also lower than the F-tabular value of 5.318. Along with innovation, the computed sum of squares is 0.03 with the same value of mean of squares between treatments. Within treatment, the computed sum of squares is 0.01 and has a mean square of 0.0125. The F-computed value was 24, which is higher than the F-tabular value of 5.318.

The results of the Analysis of Variance (ANOVA) revealed differences in the competence levels of elementary and secondary teachers across the six core behavioral competencies. At the 0.005 level of significance, statistically significant differences were identified in self-management (F = 5.33 > 5.318) and innovation (F = 24.0 > 5.318). In contrast, no significant differences were observed in professionalism

and ethics (F = 2.66), result focus (F = 0.44), teamwork (F = 0.80), and service orientation (F = 1.60). These results indicate that while both groups maintain consistently high levels of competence, variations are evident in particular areas where instructional demands and work contexts diverge.

➤ The results revealed that the top-ranked problems encountered by teachers in Tiwi District varied between elementary and secondary levels. In elementary, the 1st-ranked concern was that without adequate follow-up support or resources, teachers may struggle to implement changes based on self-assessment feedback. In contrast, secondary teachers identified their 1st-ranked concern that the tool may not account for the diverse needs and contexts of individual teachers, leading to generic recommendations that may not be applicable to all. At the overall level, two concerns shared the 1.5th rank:

The self-assessment results may lack specific guidance on how teachers can address identified areas for improvement, and without adequate follow-up support or resources, teachers may struggle to implement changes based on self-assessment feedback. Meanwhile, the problem met regarding the tool may not account for the diverse needs and contexts of individual teachers, leading to generic recommendations that may not be applicable to all, and was ranked 3<sup>rd</sup> overall.

The overall 4th-ranked problem was maintaining the momentum of applying self-assessment results over the long term may be challenging without ongoing support, monitoring, and reinforcement, which was ranked 3rd in elementary and 6th in secondary. At the 5<sup>th</sup> rank overall, Schools may place too much emphasis on the quantitative data generated by the tool, overlooking qualitative aspects of teacher performance, with a ranking of 4.5<sup>th</sup> in elementary and 7<sup>th</sup> in secondary. Following this, Teachers may have inaccurate self-perceptions, leading to discrepancies between self-assessment results and actual performance was ranked 6<sup>th</sup> overall, 8th in elementary, and 4th in secondary, suggesting that this challenge is more prominent in secondary contexts.

The findings also noted two problems tied at the 7.5th rank overall. The first was that Teachers may perceive applying the results of the self-assessment tool as an additional task, competing with other demands on their time, which was ranked 7<sup>th</sup> in elementary. The second was the self-assessment tool may focus primarily on practices, neglecting the development of other skills and relationships with students and colleagues, ranked 10th in elementary and 5th in secondary. At the 9<sup>th</sup> overall rank, technical issues or reliance on electronic platforms may disrupt the application of selfassessment results, especially in schools with limited access to technology was observed, appearing 6th in elementary and 10<sup>th</sup> in secondary. Moreover, the 10th-ranked overall problem met was Some teachers may resist or feel defensive about feedback provided through the tool, hindering their willingness to make changes, which was consistently ranked 9<sup>th</sup> in both elementary and secondary.

➤ A Professional Development Plan May Address the Problems Met by the Respondents.

#### B. Conclusions

The researcher concludes:

- The competence level in core behavior, along with selfmanagement, professionalism, and ethics, results focus, teamwork, service orientation, and innovation, is Very High in both elementary and secondary teachers in Tiwi District.
- There is no significant difference in the level of competence on the core behaviors between elementary and secondary teachers in terms of professionalism and ethics, result focus, teamwork, and service orientation. Meanwhile, there is a significant difference in the level of competence in terms of self-management and innovation.
- Both elementary and secondary teachers reported similar challenges and concerns on the use of core behavioral competencies. The top three (3) problems met by teachers in Tiwi District are the following: The self-assessment results may lack specific guidance on how teachers can address identified areas for improvement; and Without adequate follow-up support or resources, teachers may struggle to implement changes based on self-assessment feedback which rank 1.5<sup>th</sup> followed by The tool may not account for the diverse needs and contexts of individual teachers, leading to generic recommendations that may not be applicable to all on the 3<sup>rd</sup>.
- Professional development activities proposed by the researcher may address the problems met by the respondents.

# C. Recommendations

Based on the findings of this study, the following recommendations are hereby proposed to address the identified concerns and strengthen the effective use of the core behavioral self-assessment tool:

- Implement district-wide professional development programs to strengthen teachers' core behavioral competencies, with emphasis on innovation, results focus, and service orientation.
- Establish Professional Learning Communities (PLCs) to facilitate teacher collaboration, sharing of best practices, and collective problem-solving.
- Inform Public Schools District Supervisors and school heads of the key challenges identified in the selfassessment to guide policy decisions and targeted support.
- Adopt the researcher's professional development plan as a guide to address identified challenges.

# AREAS FOR FURTHER STUDY

The following topics are suggested for further study:

- The Impact of Administrative Support on Strengthening Core Behavioral Competencies
- Effects of Professional Development Programs on Educator Effectiveness
- Effect of School Environment on Competency Development

# REFERENCES

- [1]. OECD. (2023, December 11). Teacher professional development. OECD Education GPS. https://gpseducation.oecd.org/revieweducationpolicies
- [2]. Department of Economic and Social Affairs. (n.d.). Goal 4. United Nations. https://sdgs.un.org/goals/goal4
- [3]. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. https://sdgs.un.org/2030agenda
- [4]. Organisation for Economic Co-operation and Development. (2019). Supporting quality education for all in Latin America. OECD Publishing.
- [5]. Senate of the Philippines. (n.d.). Senate legislative information system (PDF). https://legacy.senate.gov.ph/lisdata/70806323!.pdf
- [6]. Organisation for Economic Co-operation and Development. (2019). *Teaching and Learning International Survey (TALIS) 2018 results (Volume I): Teachers and school leaders as lifelong learners.* https://doi.org/10.1787/1d0bc92a-en
- [7]. Department of Education. (2015, February 6). DO 2, s. 2015 Guidelines on the establishment and implementation of the Results-Based Performance Management System (RPMS) in the Department of Education. https://www.deped.gov.ph/2015/02/06/do-2-s-2015-guidelines-on-the-establishment-and-implementation-of-the-results-based-performance-management-system-rpms-in-the-department-of-education/
- [8]. Grant, C., & Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your 'house.' Administrative Issues Journal: Connecting Education, Practice, and Research, 4(2), 12–26. https://files.eric.ed.gov/fulltext/EJ1058505.pdf
- [9]. Watson, J. B. (1913). Psychology as the behaviorist views it. Psychological Review, 20(2), 158–177. https://doi.org/10.1037/h0074428
- [10]. Knowles, M. S. (1980). The modern practice of adult education: From pedagogy to andragogy. Prentice Hall/Cambridge. Accessed: August 13, 2024, 10:16 PM
- [11]. Stanford University Center for Advanced Study in the Behavioral Sciences. (2022). Emerging trends in the behavioral and social sciences: Regulatory focus theory and related motivational concepts. https://emergingtrends.stanford.edu/files/original/0206 16740617e618f85c79f0eadd71d42786e265.pdf Accessed: December 13, 2024, 12:04 PM
- [12]. Schön, D. A. (1983). The reflective practitioner: How professionals think in action. Basic Books. Accessed: December 13, 2024, 8:06 PM
- [13]. Machost, H., & Stains, M. (2023). Reflective practices in education: A primer for practitioners. CBE—Life Sciences Education, 22(2), es2. https://doi.org/10.1187/cbe.22-07-0148
- [14]. Nessipbayeva, O. (2012). The competencies of the modern teacher. Bulgarian Comparative Education Society. ERIC. https://files.eric.ed.gov/fulltext/ED567059.pdf

- [15]. Philip, M. P., & Ramya, K. (2017). Professional competencies for effective teaching learning process. International Journal of Trend in Research and Development, 4(3), 25–29. https://www.ijtrd.com/papers/IJTRD12201.pdf
- [16]. World Bank Group. (2016). World development report 2016: Digital dividends. World Bank. https://www.worldbank.org/en/publication/wdr2016 Accessed: September 13, 2024, 10:16 PM
- [17]. Goldstein, N. (2024, April 16). Behavioral competencies: Definition, types, and examples. Together Mentoring Software. https://www.togetherplatform.com/blog/behavioral-competencies Accessed: October 2, 2024, 8:20 AM
- [18]. Gandhi, H. H. K. (2023, June 29). A guide to behavioral competencies in the workplace. LinkedIn. https://www.linkedin.com/pulse/guide-behavioral-competencies-workplace-hr-hardi-kapadia-gandhi Accessed: November 7, 2024, 10:15 PM
- [19]. Sajeevanie, T. L. (2020, July). Importance of self-management and future research thoughts: A critical review perspective. ResearchGate. https://www.researchgate.net/publication/343384450\_I MPORTANCE\_OF\_SELF-MANAGEMENT\_AND\_FUTURE\_RESEARCH\_TH OUGHTS\_A\_CRITICAL\_REVIEW\_PERSPECTIVE
- [20]. Mahajan, R., Aruldhas, B. W., Sharma, M., Badyal, D. K., & Singh, T. (2016). Professionalism and ethics: A proposed curriculum for undergraduates. International Journal of Applied and Basic Medical Research, 6(3), 157–163. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC49792 94/
- [21]. O'Leary, H. (2017, February 13). The 2 behavioral competencies you need to develop. CANTOO. https://blog.cantoo.us/the-2-competencies-you-absolutely-need-to-develop Accessed: November 7, 2024, 11:27 PM
- [22]. Axiak, G. (2023, May). Self-assessment Its good and bad points. ResearchGate. https://www.researchgate.net/publication/371082082\_Self-Assessment\_-Its\_Good\_and\_Bad\_Points
- [23]. Jimerson, T. (2017). The role of E-SAT results in enhancing teachers' professional development. Journal of Educational Research and Practice, 15(2), 112–125.
- [24]. Johnson, A. (2015). The impact of E-SAT results on professional development for teachers: A comprehensive study. Journal of Educational Assessment, 12(3), 45-60.
- [25]. Warsi, L. Q., & Khurshid, K. (2022). The role of self-assessment in English language teachers' professional development in Pakistan. Education Research International, 2022, 1–13. https://doi.org/10.1155/2022/9401995
- [26]. Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development. Learning Policy Institute. https://doi.org/10.54300/122.311
- [27]. Davis, A., & McDonald, D. (2019). Teachers' reflections of instructional effectiveness: Self-assessment through a standards-based appraisal process.

- Reflective Practice, 20(1), 125–141. https://doi.org/10.1080/14623943.2019.1569508
- [28]. Department of Education. (2015, February 6). DO 2, s. 2015 Guidelines on the establishment and implementation of the Results-Based Performance Management System (RPMS) in the Department of Education. https://www.deped.gov.ph/2015/02/06/do-2-s-2015-guidelines-on-the-establishment-and-implementation-of-the-results-based-performance-management-system-rpms-in-the-department-of-education/ Accessed: August 21, 2024, 9:22 PM
- [29]. Daria, L. F. (2023). Self-efficacy, self-management and performance of teachers on the new normal. Psychology and Education: A Multidisciplinary Journal, 10(4), 407–416. https://ejournals.ph/article.php?id=21357
- [30]. David, A., & Hipolito, G. B. (2017). Self-management in the teaching profession. Academia.edu. https://www.academia.edu/33597378/SELF\_MANAG EMENT IN THE TEACHING PROFESSION
- [31]. Pearson. (2018). Self-management: Executive summary for employers. Pearson. https://www.pearson.com/content/dam/global-store/global/resources/efficacy/self-management-executive-summary-for-employers.pdf Accessed: November 10, 2024, 7:20 AM
- [32]. Manabat, I. M. (2016). Teachers' attitude and efficiency on the learner information system (Master's thesis, Pampanga State University).
- [33]. Dizon, R. Y. (2016). Nursing and pregnant teachers and their teaching performance: A basis for gender and development advocacy program (Master's thesis, Pampanga State Agricultural University).
- [34]. Sabocohan, A. O., & Supremo, E. B., Jr. (2016). Professionalism and teaching performance of faculty members in state universities and colleges in Eastern Visayas, Philippines. International Journal of Education and Research, 4(8), 1–12. https://www.ijern.com/journal/2016/August-2016/06.pdf
- [35]. Molino, H. V., & Buenvinida, L. P. (2019). Ethics, professionalism, practices, and behavior in the work environment among elementary teachers in East IV Calamba Division: An input to comprehensive training program. International Journal of Advanced Research, 7(5), 881–889. https://doi.org/10.21474/IJAR01/9110
- [36]. Camaya, Y. I., & Gabriel, A. G. (2019). Professionalism and the ethics in public service. In A. Farazmand (Ed.), Global encyclopedia of public administration, public policy, and governance. Springer. https://www.researchgate.net/publication/334596415\_XXCamaya-Gabriel2019\_ReferenceWorkEntry\_ProfessionalismAn dTheEthicsInSpdf
- [37]. Piquero, L. Z. (2024). Teachers' core competencies and performance in a DepEd high school. Psychology and Education: A Multidisciplinary Journal, 16(2), 220–226. Scimatic. https://scimatic.org/show manuscript/2386
- [38]. Reyes, J. D., & Apostol, R. L. (2024). Transformational leadership of school heads and self-regulation: The mediating role of teamwork skills in public schools.

- European Journal of Education Studies, 11(5). https://doi.org/10.46827/ejes.v11i5.5287
- [39]. Coursera Staff. (2024, April 4). What is service orientation? Coursera. https://www.coursera.org/articles/service-orientation Accessed: November 12, 2024, 6:00 PM
- [40]. Zamora, J. E., Edig, M. M. N., & Decano, R. S. (2022). The mediating effect of teachers' innovative work behavior on the relationship between teacher engagement and students' learning outcomes in mathematics. EPRA International Journal of Environmental Economics, Commerce and Educational Management, 9(4), 20–25. https://doi.org/10.36713/epra9923
- [41]. Moralista, R. B. (2016). Innovation in teaching among elementary teachers at Coto Elementary School, District of Lambunao East, Division of Iloilo, Philippines. The Journal of Social Sciences & Humanities, 2(1), 1–7. https://www.academia.edu/98406025/Innovation\_in\_T eaching\_among\_Elementary\_Teachers\_at\_Coto\_Elementary\_School\_District\_of\_Lambunao\_East\_Division\_of\_Iloilo\_Philippines
- [42]. Cadungog, C., Pasana, C. J., Ramos, R. M., Galleto, S., & Rellon, J. (n.d.). Innovative work behavior and professional competencies as predictors of work performance of teachers. Southeast Asian Journal of Multidisciplinary Studies. https://research.cmc.edu.ph/index.php/journals/article/ view/92/68
- [43]. Barro, V. V., & Villocino, R. P. (2023). Behavioral competencies of newly-hired teachers of selected schools in Nabunturan East and West District: Its effect on the individual performance. International Journal of Advance Research and Innovative Ideas in Education, 9(4), 1879–1887. https://ijariie.com/AdminUploadPdf/Behavioral\_Competencies\_of\_Newly\_Hired\_Teachers\_of\_Selected\_Schools\_in\_Nabunturan\_East\_and\_West\_District\_\_Its\_Effect on the Individual Performance ijariie21312.pdf
- [44]. Ocampo, D. J. S., & Lucasan, K. L. M. (Eds.). (2019, April). Key issues in governance, finance, school improvement, and ICT in basic education. University of the Philippines Center for Integrative and Development Studies.
  - https://www.researchgate.net/publication/333309653\_ Key\_Issues\_in\_Governance\_Finance\_School\_Improve ment and ICT in Basic Education
- [45]. Baniaga, S., Smith, J., & Reyes, L. (2024). The impact of intensive professional development on teaching practices: A comprehensive analysis. Journal of Educational Improvement, 29(2), 23–39.
- [46]. Development Asia. (2023). Ways to support a strong teaching workforce through education and training. Asian Development Bank. https://development.asia/summary/ways-support-strong-teaching-workforce-education-and-training
- [47]. Tutkun, O. F. (2015). Prospective teacher's communication skills level: Intellectual, emotional, and behavioral competencies. The Anthropologist, 19(3), 665–672. https://doi.org/10.1080/09720073.2015.11891701

- [48]. Singh, N., & Agarwal, M. (2019). A study of the self-management competence inventory among prospective secondary school teachers. International Journal for Innovative Research in Multidisciplinary Field, 5(6), 230. https://www.ijirmf.com/wp-content/uploads/IJIRMF201906036.pdf
- [49]. Kahveci, H. (2023). The positive and negative effects of teacher attitudes and behaviors on student progress. Journal of Pedagogical Research, 7(1), 290–306. https://doi.org/10.33902/JPR.202319128
- [50]. Tanang, H., & Abu, B. (2014). Teacher professionalism and professional development practices in South Sulawesi, Indonesia. Journal of Curriculum and Teaching, 3(2), 25–42. https://doi.org/10.5430/jct.v3n2p25
- [51]. Postholm, M. B. (2018). Teachers' professional development in school: A review study. Cogent Education, 5(1), 1522781. https://doi.org/10.1080/2331186X.2018.1522781
- [52]. Msonge, E., & Lekule, C. S. (2024). Fostering teacher teamwork: Strategies and challenges for school heads: A study of community secondary schools in Nyamagana-Mwanza, Tanzania. Asian Journal of Education and Social Studies, 50(4), 212–226. https://doi.org/10.9734/ajess/2024/v50i41324
- [53]. Lekhanya, L. M. (2014). Customer service orientation of institutes of higher learning in South Africa: A case study of universities of technology. Corporate Ownership & Control, 11(4), 299–310. https://doi.org/10.22495/cocv11i4c3p1
- [54]. Trapitsin, S., Granichin, O., Granichina, O., & Zharova, M. (2018). Innovative behavior of teachers: Definition and analysis. European Proceedings of Social & Behavioural Sciences, 350–359. https://doi.org/10.15405/epsbs.2018.12.02.37
- [55]. Zamora, J. E., Edig, M. M. N., & Decano, R. S. (2022). The mediating effect of teachers' innovative work behavior on the relationship between teacher engagement and students' learning outcomes in mathematics. EPRA International Journal of Environmental Economics, Commerce and Educational Management, 9(4), 20–25. https://doi.org/10.36713/epra9923
- [56]. Kunst, E. M., Van Woerkom, M., & Poell, R. F. (2017). Teachers' goal orientation profiles and participation in professional development activities. Vocations and Learning, 11(1), 91–111. https://doi.org/10.1007/s12186-017-9182-y
- [57]. Sharma, P., & Pandher, J. S. (2018). Teachers' professional development through teachers' professional activities. Journal of Workplace Learning, 30(8), 613–625.
- [58]. Natividad, K. C., & Oco, R. M. (2023). Core values, behavioral competencies and teachers' performance. International Journal of Research and Publication (IJRP), 130(1), 95–107. https://doi.org/10.47119/IJRP1001301820235314
- [59]. Dimasimpun, J., & Abarquez, C. (2024). Teaching styles and core behavioral competencies of teachers. Psychology and Education: A Multidisciplinary

- Journal, 20(4), 401–424. https://doi.org/10.5281/zenodo.11400301
- [60]. Barro, V. V., & Villocino, R. P. (2023). Behavioral competencies of newly-hired teachers of selected schools in Nabunturan East and West District: Its effect on the individual performance. International Journal of Advance Research and Innovative Ideas in Education, 9(4), 1879–1887. https://ijariie.com/AdminUploadPdf/Behavioral\_Competencies\_of\_Newly\_Hired\_Teachers\_of\_Selected\_Schools\_in\_Nabunturan\_East\_and\_West\_District\_\_Its\_Effect\_on\_the\_Individual\_Performance\_ijariie21312.pdf
- [61]. Ambasa, R. W., & Labitad, G. F. (2024). Core behavioral competencies and teachers' job satisfaction: Basis for teacher competency development plan. KCWorks. https://doi.org/10.17613/qy3r-jk05
- [62]. Fabre, M. M., & Osias, N. C. (2024). Teachers' core behavioral competencies and school performance: Basis for school development plan. American Journal of Arts and Human Science, 3(2), 181–214. https://doi.org/10.54536/ajahs.v3i2.2862
- [63]. Cruzos, R. (2022). The core behavioral competencies, work attitudes and teaching performance of senior high school teachers: Input for an intervention scheme. Psychology and Education: A Multidisciplinary Journal, 6(4), 373–393. https://doi.org/10.5281/zenodo.7463277
- [64]. Tunay, C. M. V. (2021, July 2–4). Core behavioral competencies and motivational strategies: Inputs to teacher's performance. In Proceedings of the 2nd World Conference on Education, Law, and Technology (WCELT) IOER. https://www.ioer-imrj.com/wp-content/uploads/2021/08/84.-Core-Behavioral-Competencies-and-Motivational-Strategies-Inputs-to-Teachers-Performance.pdf
- [65]. Cagaanan, J. C. A., & Arenga, J. B. (2021). Teachers' training needs and core behavioral competencies toward teaching performance in the new normal. Mazedan International Journal of Social Science and Humanities, 2(4), 10–23. Mazedan International Research Academy. https://doi.org/10.13140/RG.2.2.23789.87525
- [66]. Dedace, R. B., & Alquizar, J. S. (2024, February). Training needs analysis AY 2023 (Non-BERF template). ResearchGate. https://doi.org/10.13140/RG.2.2.23385.70242
- [67]. Celerio, J. G., & Andal, E. Z. (2024). The mediating role of DepEd core behavioral competencies and principal's motivational strategies on crisis leadership and teachers' work performance. TWIST, 19(3), 195–200. https://twistjournal.net/twist/article/view/361
- [68]. De Guzman, R. R. (2022). Good leadership and teaching competencies of public schools master teachers. Multidisciplinary International Journal of Research and Development, 1(6), 79–86. https://www.mijrd.com/papers/v1/i6/MIJRDV1I60007. pdf
- [69]. Dalimbang, E. J. P. (2024). Developmental program for the behavioral and skills competencies of teachers through Learning Action Cell sessions. International Journal of Research in Engineering, Science and Management, 7(2), 56–61.

- https://journal.ijresm.com/index.php/ijresm/article/vie w/2939
- [70]. Bantoc, A. A., & Yazon, A. D. (2023). Self-efficacy, core behavioral competence and performance of teachers: A scaffold for proficient and highly proficient teachers. International Journal of Multidisciplinary: Applied Business and Education Research, 4(12), 4530–4555. https://doi.org/10.11594/ijmaber.04.12.28
- [71]. Muldyagin, D. H. (2018). The correlation between the interest in practicing English conversation and the speaking fluency of English Department students of Pasundan University (Undergraduate thesis, Pasundan University). http://repository.unpas.ac.id/40125/
- [72]. Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. Journal of Economic Development, Environment and People, 9(4), 50–79. https://mpra.ub.unimuenchen.de/105149/1/MPRA\_paper\_105149.pdf